

Claims:

1. A method for outputting data of a diagnosis data stream of a printer or copier,

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in which the diagnosis data stream (42) comprises first data of a first data type and at least second data of a second data type,

10 wherein the first data and the second data each include structure data and use data corresponding to the respective data type,

the diagnosis data stream (42) is supplied to an evaluation program of an evaluation unit (26) for evaluating the first and the second data,

15 the structure data of the first data are analyzed with the aid of the evaluation program, a first identification which is characteristic of the first data type being determined,

20 upon the determination of the first identification a first evaluation instruction (44b) is selected from a plurality of evaluation instructions with the aid of the evaluation program and loaded, the use data of the first data being evaluated with the aid of the evaluation instruction (44b),

25 it is verified with the aid of the evaluation program whether the evaluated first data include further data areas comprising second data which can be evaluated with the aid of a further second evaluation instruction which can be selected from a plurality of evaluation instructions,

30 the second data are analyzed with the aid of the evaluation program, a second identification which is characteristic of the second data type being determined,

and in which upon the determination of the second identification a second evaluation instruction (44c) is selected from a plurality of evaluation instructions with the aid of the evaluation program and loaded, the second data being evaluated and output with the aid of the evaluation instruction (44c).

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2. The method according to claim 1, characterized in that with the aid of the first evaluation instruction (44b) the use data of the first data are evaluated and output.

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3. The method according to claim 1 or 2, characterized in that the first and/or second data each include encoded information.

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4. The method according to claim 3, characterized in that each piece of encoded information is decoded with the aid of the selected evaluation instruction.

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5. The method according to one of the preceding claims, characterized in that the information content of one data element of the first and/or second data is determined with the aid of the selected evaluation instruction (44b, 44c) by the position of the data element in the data sequence of the first or, respectively, second diagnosis data.

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6. The method according to one of the preceding claims, characterized in that the data type relates to the order of the information, the identification of the information and/or the coding of the information.

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7. The method according to one of the preceding claims, characterized in that the first and/or second data are binary data, numerical data, alphanumerical data and/or image data.

8. The method according to one of the preceding claims, characterized in that the first and/or second data include time information, error codes, measuring

values, setting values, operating state information, status information, input parameters and/or output parameters.

9. The method according to one of the preceding claims, characterized in that
5 the first data and the second data include similar information, which is included in these data in different order and/or with different coding.
10. The method according to one of the preceding claims, characterized in that the first data are different from the second data.
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11. The method according to one of the preceding claims, characterized in that the first and/or second data are sorted, converted and/or commented with the aid of the respective evaluation instruction before they are displayed.
- 15 12. The method according to one of the preceding claims, characterized in that the first data are generated by a first control unit, in that the second data are generated by a second control unit, and in that the control units (12, 14) control several preferably parallel processes.
- 20 13. The method according to claim 11, characterized in that the first and/or second control unit (12, 14) is an input and/or output control unit, a print data processing unit, an interface control unit, an operating unit, a main control unit and/or a submodule control unit.
- 25 14. The method according to one of the preceding claims, characterized in that at least a part of the first and/or second data is generated upon occurrence of preset diagnosis events, when at least one of the control units determines one or several of the following events:
30 - the occurrence of errors
- the occurrence of operating events

- the processing of print data

- preset memory states and/or

5 - the amendment of software versions.

15. The method according to one of the preceding claims, characterized in that the first and/or second data include print data and data comprising operating state information.

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16. The method according to one of the preceding claims, characterized in that the diagnosis data stream (42) is analyzed and interpreted with the aid of a data processing unit (26),

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and in that the processed first and/or second data are displayed in a preset format.

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17. The method according to one of the preceding claims, characterized in that the diagnosis data stream (42) is searched for preset data sequences with the aid of the first evaluation instruction (44b, 44c), and

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in that, dependent on the determined data sequence, a second evaluation instruction (44b) is selected, the further data assigned to this preset data sequence in the diagnosis data stream (42) being processed with the aid of the second evaluation instruction.

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18. The method according to claim 17, characterized in that the preset data sequence (42) includes key data, which indicate whether the data assigned to these key data are first data or second data.

19. The method according to one of the preceding claims, characterized in that the diagnosis data stream (42) is included in a data file, the data file being supplied to an evaluation unit (26).

20. The method according to claim 19, characterized in that a further evaluation instruction (44a) is selected and loaded by the data processing unit (26) dependent on the extension of the data file name, with the aid of this further
5 evaluation instruction (44a) the first data and the second data being determined in the diagnosis data stream (42) and are then further processed with the aid of the first and/or second evaluation instruction (44b, 44c).
21. The method according to one of the preceding claims, characterized in that
10 the evaluation instructions (44a, 44b, 44c) are each stored in a separate data file,
and in that with the aid of an evaluation unit (26) the first evaluation instruction for processing the first diagnosis data and the second evaluation instruction for processing the second diagnosis data are loaded into a main
15 memory of this evaluation unit (26).
22. The method according to one of the preceding claims, characterized in that dependent on the selection of the evaluation instruction (44a, 44b, 44c)
20 and/or the information included in the evaluation instruction (44a, 44b, 44c) an appropriate display format is selected, with which the processed diagnosis data are output with the aid of an output unit.
23. The method according to one of the preceding claims, characterized in that
25 the first and the second data both have a different data structure and/or a different data format.
24. The method according to one of the preceding claims, characterized in that the assignment of the first data included in the diagnosis data stream (42) to
30 the first evaluation instruction is made with the aid of a unique first key included in the diagnosis data stream (42) and of the second data included in the diagnosis data stream (42) to the second evaluation instruction is made with the aid of a unique second key included in the diagnosis data stream

(42), with the aid of the keys the data assigned to the respective key being identified as first data or, respectively, as second data and being recognized as first data or as second data with the aid of these keys.

5 25. The method according to one of the preceding claims, characterized in that the diagnosis data stream (42) comprising the first data and the second data is generated with the aid of a control unit, with the aid of this control unit a first key being assigned to the first diagnosis data and a second key being assigned to the second diagnosis data.

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26. The method according to claim 25, characterized in that a data amount information is stored in a predetermined distance to the key as a length information which indicates the storage amount of the respective diagnosis data in the diagnosis data stream (42).

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27. A device for outputting data of a diagnosis data stream on a printer or copier,

20 comprising an evaluation unit which processes a diagnosis data stream (42) comprising first data of a first data type and comprising at least second data of a second data type, the first data and the second data each including structure data and use data corresponding to the respective data type,

25 in which the evaluation unit executes an evaluation program for evaluating and outputting the first and second data supplied with the aid of the diagnosis data stream (42),

the evaluation unit analyzes the structure data of the first and second data with the aid of the evaluation program, the evaluation unit determining a first identification which is characteristic of the first data type,

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the evaluation unit selects and loads a first evaluation instruction (44b) from a plurality of evaluation instructions with the aid of the evaluation program upon determination of the first identification, the evaluation unit evaluating

the use data of the first data with the aid of this loaded evaluation instruction (44b),

5 the evaluation unit verifies with the aid of the evaluation program whether the evaluated first data include further data areas comprising second data which can be evaluated with the aid of a further second evaluation instruction,

10 the evaluation unit analyzes the second data with the aid of the evaluation program and determines a second identification which is characteristic of the second data type,

15 and in which the evaluation unit (26) selects and loads a second evaluation instruction (44c) from a plurality of evaluation instructions with the aid of the evaluation program upon determination of the second identification, the evaluation unit evaluating and outputting the use data of the second data with the aid of the selected evaluation instruction (44c).

20 28. Device according to claim 27, characterized in that the evaluation unit evaluates and outputs the use data of the first data with the aid of the loaded first evaluation instruction (44b).